We claim:

1. For use in an abrasivejet cutting system of the type including an abrasive-carrying conduit terminating in a sleeve and a source of high pressure water, an abrasivejet assembly comprising:

(A) a housing having a body disposed about a longitudinal axis between upstream and downstream ends, a first longitudinally-extending passageway in communication with said ends, and a conduit-accommodating passageway extending generally radially from the exterior of the body into a region in the longitudinal passageway,

said body being adapted to be coupled to a source of high pressure liquid at its upstream end, and to be coupled to an abrasivejet nozzle at its downstream end;

(B) a removable insert member within the first longitudinally-extending passageway and having

(1) upstream and downstream faces,

(2) a second longitudinally-extending fluid passageway in communication with, said faces and in axial alignment with the first longitudinal passageway, and

(3) a radially-extending passage aligned with the conduit-accommodating passageway of the housing to place an accommodated conduit in fluid communication with the second longitudinally extending passageway adjacent a mixing region within the insert,

the insert member being securable against movement within the housing by the insertion of the sleeve of the abrasive-carrying conduit into its radially-extending passageway

(C) an orifice member having a waterjet-forming orifice and supported within the insert member upstream from the mixing region with its orifice in axial alignment with the second longitudinally-extending passageway; and

(D) means for securing an abrasivejet nozzle into the downstream end of the housing so that the nozzle is in substantial axial alignment with the second longitudinal passageway.

2. For use in the cutting head of an abrasivejet cutting system, an insert member comprising:

a body having an upstream end, a downstream end, and a longitudinally-extending fluid passageway communicating therebetween;

a waterjet-forming orifice-defining structure positioned within the upstream region of the body so that the orifice is aligned with said passageway to direct a waterjet towards the downstream end when the upstream end of the body receives water from a source of high pressure water coupled to its upstream end;

the body further including a passageway extending generally radially inward from the exterior of the body for conducting an abrasive into the passageway at a region downstream from said orifice so that the abrasive is entrained into the waterjet within the longitudinally-extending passageway.

3. An abrasivejet cutting head comprising:

a housing disposed about a longitudinal axis between upstream and downstream ends in fluid communication via a longitudinally-extending through-passage,

said through-passage having an upstream region of comparatively large internal diameter sized to accommodate an insert member, a midsection of relatively smaller internal diameter, and a downstream region having an internal diameter smaller than the upstream region;

said housing further including a conduit-accommodating passageway extending generally

radially from the exterior of the housing to the midsection of the through-passage,.

the body terminating at its downstream end in a threaded neck circumventing the downstream region of the through-passage,

a threaded member rotatably advancable along said threaded neck ;

an insert member having a longitudinally-extending through passageway, a waterjet-forming orifice-defining structure within the passageway, and a generally radially-extending abrasive-accommodating conduit leading from the outside of the insert to a region within the passageway downstream from the orifice to permit entering abrasive to be entrained into the formed waterjet within said downstream region,

said insert member being supported within the upstream end of the body and oriented within the body so that its abrasive-accommodating passage is generally aligned coaxially with the axis of the body's conduit-accommodating passageway,

the body's conduit-accommodating passage being sized to accept a sleeve co-axially mounted about an abrasive-carrying conduit of the abrasivejet cutting system so that the sleeve can exert a position-stabilizing force against the insert;

means for removably securing the sleeve to the body so that the sleeve locks the insert member into position;

an abrasivejet nozzle mounted into the downstream region of the housing's passageway in general axial alignment with the waterjet-forming orifice;

collet means responsive to the upstream advancement of said threaded member with respect to the neck to secure the nozzle within the body in coaxially alignment with the jet-forming orifice.

4. The abrasivejet cutting head of Claim 3 wherein the insert member includes a sleeve-contacting external surface adjacent the abrasive-accommodating passage shaped for response to contact by the leading surface of the sleeve as the sleeve is secured to the body to rotate the insert in a manner that brings its abrasive passageway into co-axial alignment with the body's conduit-accommodating passage as a result of the force exerted by the advancing forward surface of the sleeve on the external surface.